

Lithium dissolves as alcoholism treatment

The drug lithium, commonly prescribed for manic depressives, has been periodically touted as an effective treatment for alcoholism over the past 15 years. But an exhaustive study of alcoholics given lithium for one year after hospitalization for their drinking problems, reported last week at the annual meeting of the American Psychiatric Association in San Francisco, douses the optimism of earlier investigators.

"We find lithium, in comparison to an inactive placebo, is not effective in the treatment of alcoholic males with or without depression," says study director Walter Dorus of Loyola University in Maywood, Ill.

Dorus and his colleagues, whose report will appear in an upcoming *JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION*, assembled a sample of 457 men in treatment for alcoholism at seven Veterans Administration Medical Centers around the country. Standardized interviews identified 286 subjects with no other psychiatric disorders and 171 who had been clinically depressed at some time during their lives. Alcoholics with other psychiatric diagnoses were excluded from the study.

Men in the follow-up sample had been drinking heavily for an average of 23 years, beginning at around 25 years of age.

Upon release from the hospital, subjects were randomly assigned to lithium or placebo treatment and reinterviewed every month for one year. A total of 280 alcoholics—172 with no history of depression—stuck with their treatment for the entire year.

About 31 percent of the year-end sample remained abstinent, a proportion similar to that reported by other researchers. Abstinance was only a few percentage points greater in depressed and nondepressed lithium patients, a statistically insignificant difference, Dorus says.

Furthermore, there were no marked differences during the study between lithium and placebo alcoholics in number of days of drinking, alcohol-related hospitalizations and changes in the severity of depression.

Subjects attending Alcoholics Anonymous regularly did not benefit from lithium treatment either, Dorus adds.

"In my opinion, the VA study is definitive," says psychiatrist James W. Jefferson of the University of Wisconsin Medical School in Madison. "Overall, lithium is not useful in the treatment of alcoholism."

But according to psychiatrist Jan A. Fawcett of Rush-Presbyterian-St. Luke's Medical Center in Chicago, who also presented new data at the psychiatric meeting, lithium still holds promise in some cases of alcoholism. He and his co-

workers followed 122 alcoholics for 18 months after release from a private hospital. The 28 subjects maintaining high blood levels of lithium were significantly more abstinent and required fewer returns to the hospital than those with low blood levels of lithium or placebo controls, Fawcett reports. If a patient fell off the wagon, however, high blood levels of lithium did not reduce their drinking, he adds.

Alcoholics in the VA sample with comparably high blood levels of lithium showed no significant improvement,

Rise of Tibet and Rockies set ice-age stage

Ever since 19th-century geologists discovered that huge ice sheets covered parts of Europe and North America at several times in the past, scientists have wondered what causes ice ages. Computer experiments now suggest the rise of the two great plateaus on either side of the Northern Hemisphere primed the planet for entering the current glacial cycle, which began 2.5 million years ago. Moreover, these plateaus may explain other geologically recent climate changes, such as the development of the Gobi Desert and the drying out of the Mediterranean and California.

According to William F. Ruddiman from Columbia University's Lamont-Doherty Geological Observatory in Palisades, N.Y., and his colleagues, both the Tibetan plateau and the high country of western North America rose at about the same time, mostly during the last 10 million years. To learn how this uplift changed the world's climate, Ruddiman's group turned to an atmospheric general-circulation model run on a supercomputer at the National Center for Atmospheric Research in Boulder, Colo.

The results show that the plateaus may go a long way toward explaining the modern climate of the Northern Hemisphere. "Uplift with remarkable accuracy explains the direction of climate change in most areas," says Ruddiman.

He and John E. Kutzbach from the University of Wisconsin-Madison simulated three worlds with the climate model: one without the Tibetan and North American plateaus, one with the full plateaus and one with the plateaus at half-height. Because the climate model's limited resolution could not include individual mountains or ranges, the model tested only how extensive areas of high topography affect climate.

Researchers have long known that mountainous regions divert wind streams and create "rain shadows" on their leeward sides. But the computer model demonstrates that plateaus cause other profound changes in weather pat-

Dorus notes. He says the evidence does not support arguments for including lithium in alcoholism treatment—the most recent of which appears in a letter in the *MARCH ARCHIVES OF GENERAL PSYCHIATRY* by psychiatrist Abraham Flenbaum of the University of Miami School of Medicine.

Psychiatrist Donald W. Goodwin of the University of Kansas Medical Center in Kansas City has not totally given up on lithium. "It may be useful with a subgroup of alcoholics, as Fawcett suggests," Goodwin says. "But further studies probably won't be done after the negative findings of the VA researchers come out."

— B. Bower

terns, Ruddiman reported last week at a meeting of the American Geophysical Union in Baltimore.

Without uplift, according to the model, winds tend to travel from west to east over most of the Northern Hemisphere. Plateaus divert the flow as expected, but they also create thermal effects that produce monsoonal circulation patterns. During summer, heat radiating from the high plateaus creates a low-pressure system that draws air toward the uplifted region. Because of the Earth's Coriolis force, this converging air curves to the right, causing winds to move counterclockwise around the plateau. In winter, the opposite thermal effect drives wind in a clockwise circulation pattern around the plateau, the researchers say.

This combination of diversion and monsoonal circulation exerts strong climate effects. According to the model, the plateaus cause drier summers in both the Mediterranean and the west coast of North America. The interiors of Eurasia and North America also dry out, and northern regions experience colder winters and summers. The summer cooling is important because it should help snow survive year-round in the high latitudes, allowing ice sheets to develop. Ruddiman says the model results match the pattern of changes occurring over the last 10 million years or so.

These results will not alter scientist's prevailing belief that variations in Earth's orbit set the pace of the present glacial cycle. Rather, says Ruddiman, uplift played a key role in setting the stage for this cycle. He is planning future computer experiments that should better test how plateaus affect climate, especially in the oceans.

Eric J. Barron, a climate researcher at Pennsylvania State University in University Park, calls these experiments an important contribution. "No one had really modeled how changes in topography might actually affect the evolution of climate toward glaciation," he says.

— R. Monastersky